

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] **FIGS. 1A to 1C** are diagrams showing one embodiment of a display unit with a touch panel according to the present invention;

[0013] **FIGS. 2A and 2B** are diagrams generally illustrating a specific example of a display means within a housing in **FIG. 1**;

[0014] **FIGS. 3A to 3C** are diagrams illustrating how an operator touches a finger tip on a touch panel in **FIG. 1**;

[0015] **FIG. 4** is a graph showing how to determine from a pressure detected by a pressure sensor whether the finger tip illustrated in **FIG. 3** is pushing the touch panel in, or is in touch with the touch panel, or is released from the touch panel;

[0016] **FIGS. 5A and 5B** are block diagrams illustrating exemplary specific circuit configurations of a main portion in the embodiment illustrated in **FIG. 1**;

[0017] **FIGS. 6A and 6B** are tables schematically showing specific examples of databases in a storage unit in **FIG. 5**;

[0018] **FIG. 7** is a flow chart illustrating a first specific example of a function control performed by a control unit in **FIG. 5**;

[0019] **FIG. 8** is a diagram illustrating a first specific example of images displayed on a display screen in **FIG. 1** in the process of a control operation illustrated in **FIG. 7**;

[0020] **FIG. 9** is a diagram showing a first specific example of a change in pressure produced by a finger tip for executing the control operation illustrated in **FIG. 7**;

[0021] **FIG. 10** is a diagram illustrating a second specific example of images displayed on a display screen in **FIG. 1** in the process of the control operation illustrated in **FIG. 7**;

[0022] **FIG. 11** is a diagram showing a second specific example of a change in pressure produced by a finger tip for executing the control operation illustrated in **FIG. 7**;

[0023] **FIG. 12** is a flow chart illustrating a second specific example of the function control performed by the control unit in **FIG. 5**;

[0024] **FIG. 13** is a diagram illustrating a specific example of images displayed on the display screen in **FIG. 1** in the process of a control operation illustrated in **FIG. 12**;

[0025] **FIG. 14** is a diagram showing a specific example of a change in pressure produced by a finger tip for executing the control operation illustrated in **FIG. 12**;

[0026] **FIG. 15** is a flow chart illustrating a third specific example of the function control performed by the control unit in **FIG. 5**;

[0027] **FIG. 16** is a diagram illustrating a specific example of images displayed on the display screen in **FIG. 1** in the process of the control operation illustrated in **FIG. 15**;

[0028] **FIG. 17** is a diagram showing a specific example of a change in pressure produced by a finger tip for executing the control operation illustrated in **FIG. 15**;

[0029] **FIG. 18** is a flow chart illustrating a fourth specific example of the function control performed by the control unit in **FIG. 5**;

[0030] **FIG. 19** is a diagram illustrating a specific example of images displayed on the display screen in **FIG. 1** in the process of a control operation illustrated in **FIG. 18**;

[0031] **FIG. 20** is a diagram showing a specific example of a change in pressure produced by a finger tip for executing the control operation illustrated in **FIG. 18**;

[0032] **FIG. 21** is a flow chart illustrating a fifth specific example of the function control performed by the control unit in **FIG. 5**;

[0033] **FIG. 22** is a diagram illustrating a specific example of images displayed on the display screen in **FIG. 1** in the process of a control operation illustrated in **FIG. 21**; and

[0034] **FIG. 23** is a diagram showing a specific example of a change in pressure produced by a finger tip for executing the control operation illustrated in **FIG. 21**.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0035] In the following, the present invention will be described in connection with several embodiments thereof with reference to the accompanying drawings.

[0036] **FIGS. 1A to 1C** are diagrams showing one embodiment of a display unit with a touch panel according to the present invention, and **FIG. 1A** is a perspective view, **FIG. 1B** is a side view, and **FIG. 1C** is a cross-sectional view. The display unit comprises a housing 1; an opening 1a; display screen 2; a mount 3; a stand 4; a rotating shaft 5; pin holes 6; a pin 7; a display panel 8; a display surface 8a; a touch panel 9; and a supporting member 10.

[0037] As can be seen in **FIG. 1A**, the box-shaped housing 1 is formed with a rectangular opening 1a through a front face thereof, and the display screen 2 is fitted in the opening 1a. Though not shown, displayed on the display screen 2 are members and areas for activating functions assigned to touch-driven members such as functional buttons and messages (hereinafter collectively called the "touch-driven members"). As a user touches such a touch-driven member with a finger tip, the nib of a pen, or an instructing means such as a pen-shaped input device, the user can operate a device which incorporates the display unit according to this embodiment (for example, a personal computer, portable terminal, ATM, ticket vending machine, and the like).

[0038] The mount 3 is integrally formed on the back of the housing 1, opposite to the opening 1a. The mount 3 is mounted to the stand 4 through the rotating shaft 5. With the mount 3, the housing 1 is rotatable about the rotating shaft 5 with respect to the stand 4, so that the display screen 2 can be changed in orientation by rotating the housing 1.

[0039] While the display screen 2 may be continuously changed in orientation, the display screen 2 in this embodiment is designed to permit a gradual change in orientation. For this purpose, the mount 3 is formed with a plurality of pin holes 6 on a side face arranged about the rotating shaft 5, and the pin 7 is provided opposite to one point on a line along which the pin holes 6 are arranged, as illustrated in **FIG. 1B**, such that the pin 7 can be pushed into the stand 4